PESTICIDES and YOU

44 Questions & Answers

By Gretta Goldenman
& Sarojini Rengam

IOCU/PAN

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Gretta Goldenman and Sarojini Rengam also worked together on the publication,"Problem Pesticides, Pesticide Problems: A Citizens' Action Guide to the International Code of Conduct on the Distribution and Use of Pesticides."

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ISBN 967 - 9973 - 38 - 7
Researched and written by Gretta Goldenman & Sarojini Rengam
Cover design by Viknesh Balan
Production by Sarojini Rengam & Shantini Ramiah
Printed by Ganesh, Penang, Malaysia

Published by the
International Organization of Consumers Unions (IOCU)
Regional Office for Asia and the Pacific
P.O. Box 1045, 10830 Penang, Malaysia.
Tel: 60-4 20391/371396 Telex: MA 40164 APIOCU
Fax: 60-4 366506 Cable: INTEROCU

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FOREWORD

The inappropriate and indiscriminate use of pesticides is so widespread and so serious that there is now a United Nations sponsored and administered International Code of Conduct on the Distribution and Use of Pesticides.

These very chemicals designed in the name of preventing diseases, and reducing hunger through protecting our food supply, have become generators of disability, death and destruction.

Disability and death falls heavily not just on millions of human beings who are seriously poisoned yearly but on vast colonies of other benign living things. Destruction comes in the form of destroyed ecosystems and poisoned waters. And new breeds of "superpests" hit back with a vengeance.

Both ecology and economics, demand the assertion of a different paradigm in pest management. That paradigm of alternatives has been with us and has been successfully implemented, when given a chance. Today, citizens' groups throughout the world linked through the Pesticide Action Network (PAN) are now seeking to make that possible.

This book, **Pesticides and You** by Gretta Goldenman and Sarojini Rengam is part of that effort. It attempts in a question-and-answer format to systematically address the various issues most often discussed. This is Gretta's and Sarojini's second joint-venture and they have applied to it the same excellence and teamwork that made their first work, "Problem Pesticides, Pesticide Problems" a major work and a great success.

Anwar Fazal
IOCU
Penang, Malaysia

January 1989

ACKNOWLEDGEMENTS

Pesticides and You would not have been possible without the help of numerous colleagues and friends. We are thankful to Michael Hansen and Monica Moore for their valuable comments. We would also like to thank Martin Abraham for his active support, useful contributions and for suggesting the title. We are especially grateful to Anwar Fazal who conceptualised the idea for such a book and gave us the encouragement and support at every stage of the book's development. Thanks to Steven Nyanzi and David Weir who helped us draft the initial questions and answers. We are also thankful to Shantini Ramiah for help in the production of the book and Anne Chan, Andrew Aeria and Karen Snyder for proof-reading.

We are grateful to the Asian Partnership for Human Development, Hong Kong, the Canadian Mission Administered Fund, Thailand, Cebemo, Netherlands, Danchurchaid, Denmark and Inter Pares, Canada for their support which has made this book possible.

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January 1989

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January 1989

Table Of Contents

Introduction 1

I. How Safe are Pesticides? 2

II. Pesticides and Human Health 5

III. Pesticides and the Environment 9

IV. Pesticides and Agriculture 11

V. Alternatives to Pesticides 14

VI. The Pesticide Industry 17

VII. The Role of Governments 21

VIII. The Role of Citizens 24

Resources 27

About PAN 31

Quotes 33

Notes 37

INTRODUCTION

Since the introduction of DDT, chemical pesticides have been promoted as the easy solution to the age-old problem of pest control. Today pesticides are used extensively around the world.

At first pesticides seem cheap and effective. But in the long run these chemicals may well bring more problems than they solve. Among the drawbacks of chemical-based pest control are pest resistance, higher farming costs, and risk of harm to human health and the environment.

This booklet seeks to introduce the major issues surrounding the global proliferation of pesticides by providing short answers to 44 common questions. Its purpose is to help concerned citizens become informed and involved in the debate about pesticide use.

I. HOW SAFE ARE PESTICIDES?

1. What is a pesticide?

A poison used to kill a plant or animal which some humans consider a pest. Pesticides are sometimes classified according to what they kill – insects (insecticides), plants (herbicides), moulds (fungicides), and so on.

2. How widely are pesticides used?

More than one pound of pesticide is manufactured each year for every man, woman and child on the planet. And the amount used is increasing rapidly. In India, annual pesticide use came to 2,000 tons in the 1950s; today more than 80,000 tons are used each year.[1] In Africa, pesticide usage increased five-fold during the 1970s.[2]

3. If we do not use pesticides ourselves, why should we be concerned about the use of pesticides?

- The pesticides that farmers apply to their crops may end up as residues on our food or as contaminants in our drinking water.
- When people are poisoned by pesticides as they work in fields or factories, society is harmed by their suffering and the loss of their productivity.
- Pesticides often kill birds, fish and other animals besides the targetted pest. This disrupts ecological systems and erodes the genetic diversity of the earth.
- In 1986, when farmers in Spain used an illegal pesticide to control unwanted crayfish in rice fields, 30,000 birds in a nearby wildlife sanctuary died from consuming the poisoned crayfish.[3]

4. Just how dangerous are pesticides?

- Pesticides vary in how they affect organisms, including people, and in how long they persist in the environment. The World Health Organization (WHO) ranks pesticides from 'Extremely hazardous' to 'Slightly hazardous'. But this system is based on an acute toxicity measure (LD50 – lethal dose for 50 percent of laboratory test animals) and does not consider the risk of cancer, birth defects or other chronic health effects.

- Pesticides can harm in ways we may not expect. For example, phenoxy herbicides like 2,4,5-T are designed to kill plants by causing them to grow too quickly, but they can also poison animals by damaging their livers.[4]

- Two or more pesticides in combination can be much more toxic than one could predict on the basis of their individual toxicities – an effect called synergism. The common practice among peasant farmers of mixing several chemicals into a pesticide 'cocktail' is particularly dangerous, given that few combinations have ever been studied.

- Many 'inactive' or 'inert' ingredients which may make up over 95 percent of a pesticide formulation are now known to be health hazards too![5]

5. Aren't pesticides thoroughly tested in laboratories and extensive field trials before being sold on the market?

No. The U.S. has the most stringent testing standards in the world, yet as of 1983 only four of the over 600 chemicals used in pesticides today had undergone all legally required tests. Only 38 percent had been tested for cancer-causing ability, 30-40 percent for birth defect-causing properties, and less than 10 percent for potential genetic effects.[6] Virtually none have been tested for potential damage to the body's nervous or immune systems.

6. Isn't it true that most pesticide poisoning cases are due to misuse or abuse by farmers and consumers?

Yes, but:

- Pesticide labels often do not provide adequate safety information. In developing countries, pesticide containers sometimes have no labels at all!
- Many victims cannot read the labels on pesticide containers, do not realize the danger of the substance they are using, or have not been trained in safe use techniques.
- Many victims are misled by corporate advertising stressing the benefits of pesticides while minimizing or ignoring the dangers.
- Workers often fear they will lose their jobs if they demand safety equipment or if they object to unsafe practices, like entering a newly sprayed field.
- Many pesticides require facial masks, respirators and heavy rubber protective equipment for 'safe' application. In regions where the climate is hot and humid, this equipment is often not only unavailable but also inappropriate.

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II. PESTICIDES AND HUMAN HEALTH

7. How do pesticides harm people?

- Pesticides can enter the body through the lungs, digestive system, or skin. Depending on the pesticide, health effects can be immediate (acute) or they can occur after years of low-level exposure.
- Symptoms of acute poisoning can include headaches, blurred vision, nausea and vomiting, changes in heart rate, muscle weakness, respiratory paralysis, mental confusion, convulsions, coma, and death.[7]
- Chronic low-level pesticide exposure can lead to cancer, nervous system disorders, liver and kidney damage, respiratory problems, and reproductive problems. Often pesticide-caused health problems do not become evident until years later, when it may be difficult to link to a specific chemical.
- Pesticides can affect reproduction by harming the foetus, causing miscarriage, stillbirth or birth defects, or by altering genetic material so that a mutation is carried on to the next generation.[8]

8. How many people are harmed by pesticides?

One million poisonings a year and 20,000 deaths, according to a 1985 WHO study.[9] A 1983 UN report suggests two million poisonings and 40,000 deaths a year.[10] Probably half of the poisonings and three-quarters of the deaths occur in the Third World, which uses only one-fifth of the world's pesticides.[11]

But all these estimates are probably undercountings. A recent Philippines study found that after peasant farmers started using organochlorine insecticides, the mortality rate for adult males in rural

areas rose by 27 percent. The deaths had been diagnosed as heart attacks, strokes, or other conditions similar to insecticide poisoning. Because of the strong correlation, the study concluded that fatal poisoning by pesticides in rice-growing areas of Asia was closer to 'an annual excess mortality of many tens of thousands'.[12]

And, if recent Sri Lankan figures (13,000 hospitalizations and 1,000 deaths out of 14.5 million people) were applied globally, the numbers would be horrific – 2.9 million people hospitalized each year for acute pesticide poisoning with 220,000 deaths.[13]

9. Aren't statistics on pesticide poisonings distorted because they include suicide attempts?

Most available data come from hospital or public health records, which do include cases of deliberate ingestion of pesticides. But statistics are also distorted by the underreporting of most accidental poisonings. Access to medical care is rare in developing countries and, even if available, most doctors have no training in how to recognize a pesticide poisoning.

While pesticides are implicated in many suicides, how much is due to easy access to these poisons is hard to say. At the very least, we should question the wisdom of allowing chemicals for which no antidote is known, such as the weedkiller paraquat, to be obtained over the counter.

10. Isn't it true that the pesticide testing conducted on laboratory animals is not always applicable to humans?

Because it is ethically unacceptable to test pesticides on humans, animals such as rats and mice are used. The effects on these animals are not always the same as on humans. Sometimes they are affected more, sometimes less. In the case of the drug thalidomide, test animals were unaffected, whereas humans suffered tragic birth abnormalities. Chemicals causing cancer in animals are not always

man, with the possible exception of arsenic, also do so in experimental animals, generally rodents.[14]

11. What about pesticides and the food we eat?

For most of us, the primary source of pesticide exposure is what we eat and drink. Maximum Residue Levels (MRL) and Acceptable Daily Intake (ADI) are measures set by governments to assure us that human exposure to pesticides is limited. But there is no fool-proof way to ensure a safe universal ADI, because of the diversity of foods we eat and because some people are more vulnerable than others – especially young children and the malnourished. MRLs and ADIs also do not take into account the effects of combinations of pesticides or of pesticide breakdown products.

Often food is not tested before consumption. In December 1987, 116 people were poisoned in Hong Kong when they ate spinach contaminated by methamidophos.[15] And hundreds of people in California, U.S. became ill after eating watermelon grown in fields illegally treated with aldicarb.[16]

12. Don't we need pesticides to eliminate insect-borne diseases, like malaria?

Some pesticides, especially DDT, have been useful in controlling mosquitoes carrying malaria. But overuse of insecticides in farming has caused mosquitoes to develop resistance, leading to a resurgence of malaria in many parts of the world. In Sri Lanka during the 1960s, public health programmes using pesticides helped bring about a drop in malaria cases from three million to 25. By the early 1970s, however, DDT-resistant mosquitoes started to push infection levels to new levels.[17]

Ironically, pesticides may now be a more serious health concern than malaria in some countries. Malaria did not cause a single death in 1978 in Sri Lanka, yet at least a thousand people died from pesticide poisoning.[18]

For long-term control, non-chemical methods may well be more effective than the 'quick fix' use of pesticides. Sri Lanka's self-help Sarvodaya movement has had considerable success mobilizing villagers to identify breeding sites of malaria-bearing mosquitoes and then drain, fill, or apply oil films to the breeding sites.[19]

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III. PESTICIDES AND THE ENVIRONMENT

13. How do pesticides harm the environment?

- Some harm living organisms other than the targetted pest.
- Some travel through the food chain to bioaccumulate in higher organisms.
- And some persist in soil, air, surface water and groundwater, continuing to poison for a long time.

14. What is 'bioaccumulation' of pesticides and why is it a concern?

Pesticides can become concentrated, perhaps to toxic levels, via the food chain. Thus, an insect feeding on plants sprayed with pesticides might be eaten by another insect which might then be eaten by a bird. This is especially a problem with pesticides that are fat-soluble and highly persistent, including DDT and other organochlorines.

Traces of pesticides too small to kill the targetted pest can accumulate to levels high enough to harm species further on up the food chain. In the early 1970s, hundreds of people in South India – all poor and of low caste – were afflicted with a mysterious, painfully crippling disease. Investigations finally determined that the condition was caused by eating pesticide-contaminated crabs scavenged from sprayed rice fields.[20]

15. Don't pesticides usually disappear once they are applied?

Many pesticides do break down rapidly in the environment, but others – like DDT and dieldrin – can remain toxic for 20 years or

longer, continuing to kill insects and harm other organisms. The breakdown products of some pesticides – aldicarb and malathion, for instance – can be more toxic than the parent compound.[21]

Under the hot and humid conditions found in many Third World countries, persistent pesticides apparently break down more quickly, but bioaccumulation can still take place. In 1977, because of heavy pesticide use in Central America, people in Nicaragua and Guatemala carried 31 times more DDT in their blood than people in the U.S. where DDT was banned in 1970.[22]

16. *Is our drinking water pesticide-free?*

Until pesticide residues started turning up in drinking water wells a few years ago, most people believed groundwater was protected from contamination by soil and rock formations. By 1986, a total of 19 different pesticides applied in agriculture had been detected in groundwater in 24 out of the U.S.'s 50 states. Some towns must bring in bottled water from other sources because their community's drinking well is contaminated.[23]

17. *Aren't pesticides only a problem in areas where the chemicals are actually applied?*

No, pesticide particles can be carried thousands of miles via wind, rain, snow, or surface water. Today virtually all human beings contain some organochlorine pesticide residues in the fatty tissues of their bodies. Even seals in the Antarctic – thousands of miles from where pesticides are used – have DDT residues in their bodies.[24]

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IV. PESTICIDES AND AGRICULTURE

18. Don't we need pesticides to grow more food for hungry people?

No. The world currently produces more than enough food for everyone on the planet. The problem is not insufficient production, but that poor and hungry people lack the means to pay for or to grow the food they need. Agricultural chemicals cannot solve that problem.

The Green Revolution did dramatically increase yields but only with costly combinations of high-yielding seeds, fertilizers, pesticides and irrigation. Wealthier farmers – able to buy in volume and with greater access to credit – benefit more from its technologies than small peasant farmers, who cannot afford the required inputs. Ten years after the Green Revolution came to a Philippine rice-growing village dominated by a few large landowners, the large farms had grown by 50 percent, displacing many smaller farmers.[25] Furthermore, most pesticides used in the Third World (70 percent, says one study[26]) are applied on luxury crops grown for export to the U.S., Europe and Japan and not on basic foods for hungry people.

19. Weren't pesticides developed because they are the best way to control pests?

Farmers have always sought better methods of controlling the insects, diseases and weeds that threaten their crops. Many turned to pesticides as an 'easy solution' to an age-old problem, and discarded traditional pest control techniques. The pesticide industry and government agricultural ministries aggressively promoted this move as modern and 'better', neglecting to inform users about the hazards and drawbacks of chemical pest control.

Today many farmers in the Third World, the U.S. and Europe are disillusioned with chemical pest control. They are growing crops with little or no pesticides. Their success at maintaining high crop yields and increasing profits shows that pesticides are not the 'best' pest control method.[27]

20. Don't pesticides diminish the amount of crops lost to insects, diseases and other pests?

Extensive use of pesticides can actually increase crop losses in the long term. In the U.S., crop losses from insects, disease, and weed pests have increased from 32 to 37 percent since the late 1940s, despite intensified use of more toxic chemicals.[28] This is because pesticides lose their effectiveness over time – a phenomenon known as the 'pesticide treadmill'.

21. What is the 'pesticide treadmill'?

At first, chemical pest control seems cheap and effective, but pesticides tend not to work in the long run. Pests inevitably develop resistance to the very chemicals aimed at them. Because the natural enemies that once kept the pests under control are usually destroyed as well, the pests multiply to become greater threats – a phenomenon known as resurgence. In addition, insects never before considered a problem because natural enemies kept their numbers at low levels may emerge as pests. Of the 25 most serious pests in California, U.S., 17 were found to be resistant to one or more classes of pesticides, while 24 were cases of resurgence.[29]

To combat resurgence and resistance, farmers then apply larger quantities of more powerful (and often more costly) chemicals, beginning an addiction or 'treadmill' from which escape is difficult.

22. *Wouldn't it be anti-farmer to stop the use of pesticides in agriculture?*

While pesticides may provide farmers with short-term insurance against pest damage, the pesticide addiction can also increase farmers' costs beyond the point of profitability. On the other hand, farmers using no pesticide through integrated pest management (IPM) techniques earned almost 50 percent more than farmers spraying on fixed calendar schedules.[30] Thus anyone who advocates economically viable alternatives to chemical pesticides is decidedly pro-farmer.

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V. ALTERNATIVES TO PESTICIDES

23. Aren't pesticides popular because they are so dependable and effective? If so, why should we switch to alternatives?

In the long term we have no choice but to stop using chemical pesticides. Pests are developing resistance to new chemicals faster than ever. In 1944, only 44 insect species were known to be resistant to insecticides.[31] By 1984, at least 447 insect species, 100 plant pathogens, and 48 species of weeds had evolved pesticide resistance.[32] In order to keep chemical pesticides effective for future emergency pest control situations, we should greatly reduce their use today.

And alternatives to pesticides are just as effective as pesticides. We need only look to the experiences of the many thousands of farmers in industrialized and developing countries who have freed themselves from dependency on chemicals. They are showing that alternatives like IPM can be put into place immediately, reducing pesticide use by 50 to 75 percent or more with no decrease in crop yields.[33]

24. What is integrated pest management (IPM)?

IPM has many definitions. At its best, IPM is a scientifically superior means of pest control, integrating all available pest control methods, including biological controls and cultivation techniques. Under IPM, populations of pests are carefully monitored. Chemicals are used only when population reach a threshold where economic damage to the crop is possible and non-chemical methods will not work in time.

When applied to plots of rice in the Philippines, IPM cut total pest control costs in half, with no loss in yields.[34] Unfortunately, the pesticide industry now uses the term IPM to continue selling

pesticides as the 'best' method of pest control, retaining only the notion of monitoring to determine when to spray.

25. What is meant by 'sustainable' pest control?

Today people working for chemical-free pest control recognize the need for an entirely new perspective, and the concept which is emerging is called 'sustainability'. Sustainable pest control recognizes that nature is self-regulating, if there is diversity of species. Instead of directly intervening with chemicals, the goal is to enable nature to solve the problem internally.[35]

Sustainable agricultural systems are designed as closed resource cycles, beginning with recycling organic matter to build healthy soils. Many traditional land-use systems – like raising fish and edible aquatic weeds in rice paddies – are fertile sources of experience and wisdom in achieving sustainability in agriculture.[36]

26. In the case of an emergency pest outbreak, shouldn't pesticides be used?

Perhaps, but only as a last resort. Alternative strategies should be put into place first, and the short and long-term effects of any proposed pesticide use fully considered. And all information about the decision should be published for the press and public to review.

27. Won't biotechnology make pesticides unnecessary?

Not if current trends continue. Some of the most advanced research in biotechnology is being carried out by the large transnational chemical corporations (TNCs), with profit as the goal. While some companies are trying to engineer disease and pesticide-resistant crops, others are making crops more pesticide-resistant.

For instance, one of the main 'problems' with herbicides is that they not only kill weeds, but can damage the very crops they are supposed

to protect. Because this limits the use (and sale) of herbicides, at least 28 TNCs have launched over 65 research programmes to engineer herbicide-resistant crop varieties. The giant TNC, Monsanto, expects to have cotton varieties resistant to its herbicide 'Roundup' on the market by 1989,[37] and Ciba-Geigy scientists have already identified the gene that will protect crops against one of its most widely sold herbicides, 'Atrazine'.[38]

Compared to the potential for profits in commercial crop improvements, TNCs often have little economic incentive to develop pest resistance in the basic food crops needed to feed the world's hungry – even though this would benefit society more.

28. *Why aren't environmentally sound alternatives to pesticides made more widely available?*

Because the chemical industry makes more profits from pesticides than from alternative pest control methods. While profit in itself is not bad, there is cause for concern when the search for more profitable products, and not health or the environment, drives most new agricultural research.

Sustainable pest control not only makes more sense for health or environmental reasons, but because it gives us – as consumers, farmers, or simply concerned citizens – more control over the basic technology that affects our lives today.

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VII. THE PESTICIDE INDUSTRY

29. What do you mean by the 'pesticide industry'?

All organizations and individuals engaged in manufacturing or marketing pesticides, including some of the largest transnational corporations (TNCs) in the world. The pesticide industry is highly concentrated. The top three agrochemical corporations in 1983 – Bayer of Germany, Ciba-Geigy of Switzerland and Monsanto of the U.S. – controlled over 25 percent of the global trade.[39]

The TNCs are organized into complex, almost impenetrable webs. Bayer's Agricultural Chemicals Division, for instance, sells pesticides in over 100 countries via 50 overseas subsidiaries. As a whole, the pesticide industry is highly secretive about any data which might give others a competitive edge, and even health and safety information can be extremely hard to obtain.

30. Isn't the pesticide industry simply responding to the demands of farmers and other pesticide users?

Much of agriculture's current dependency on chemicals came about because industry's aggressive promotion of pesticides as 'modern' and 'safe' created demand. With European and North American markets approaching saturation, the pesticide industry is now promoting its products heavily to Third World farmers and governments.

In its drive to expand global sales, the pesticide industry has sometimes been shockingly irresponsible. When governments of industrialized countries banned some pesticides as too dangerous, the manufacturers simply 'dumped' the chemicals by exporting them to developing countries with less stringent regulations. Particularly atrocious were experiments carried out by Ciba-Geigy in 1975, in which chlordimeform (a carcinogen) was sprayed on Egyptian

children in an effort to persuade the Egyptian government to register the pesticide![40]

31. If most pesticide poisoning cases are due to misuse or abuse by users, how can companies be blamed?

The pesticide industry itself has most of the information about the risks of a given pesticide as well as the resources to prevent most misuse and abuse. But without public pressure, they make little effort to do so. Pesticides are still being sold with dangerously inadequate labels and packaging, and by poorly trained sales personnel who are keen to sell and therefore give misleading advice.[41]

32. But isn't the pesticide industry carrying out pesticide safety training activities?

Yes, in some places. But such trainings enhance the notion that chemicals are the only effective method of pest control, an approach which promotes industry products. Alternative methods of pest control are seldom on the curriculum.

33. Doesn't the pesticide industry provide badly needed jobs in the Third World?

Pesticide production is capital-intensive, and so is pesticide use. That means that less rather than more people are employed when agriculture becomes chemical-dependent. Where there is a surplus of labour, as is the case in most Third World countries, it simply does not make sense to eliminate jobs by turning to chemicals for pest control.

In contrast, alternative pest control strategies like integrated pest management (IPM) depend more on human expertise and labour.

34. Was the industrial accident at the Bhopal, India pesticide plant just a fluke?

The Bhopal disaster which left more than 2,000 persons dead and 100,000 injured for life destroyed the myth that the chemical industry claims to have a good safety record. Major accidents in West Virginia, U.S., and in Switzerland shortly thereafter reinforced the fact that pesticide production facilities in industrialized countries are also vulnerable.[42]

The chemical processes needed to produce the active ingredients in pesticides are often highly complex. Unexpected runaway chemical reactions, as at Bhopal, are an ever present risk. This risk is compounded by the reluctance of chemical companies to keep surrounding communities fully informed about the hazardous chemicals and processes in their midst.

35. But don't most of modern technology's benefits including those of pesticides – inevitably bring some risk? And don't these benefits outweigh the drawbacks?

- The pesticide industry uses risk/benefit arguments to defend pesticide use. Yet we still do not know about all the ways in which pesticides cause harm, partly because industry still controls and withholds much health and safety data. In the light of this uncertainty, shouldn't we err on the side of caution and use fewer rather than more chemicals in our lives?

- And we should ask who bears the risk and who really benefits. With any technological change, risks and benefits are distributed according to prevailing social and economic conditions. In the case of pesticides, the rural poor of the Third World are hit hardest by accidental and occupational poisoning (aggravated by lack of basic medical care), contamination of the environment (source of their food and water), and other costs. In contrast,

those who benefit are usually already better off, like the large landowners and, of course, the pesticide industry.

- While the high yields of chemical-intensive monocultures are impressive, traditional methods of inter-cropping can be just as productive. In the Philippines, for instance, the high yields of Green Revolution rice should be compared to the total amount of nutrition – fish, crabs, prawns, frogs and edible weeds as well as rice – available from traditional rice paddies.[43]

- And, though pesticides can be effective in the short term, extensive use of agricultural chemicals may be reducing the long-term productivity of the earth. Pesticides and fertilizers can kill soil-building organisms important for soil fertility. Populations of earthworms, for example, are dramatically reduced by most carbamate pesticides.[44]

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VIII. THE ROLE OF GOVERNMENTS

36. *If pesticides are so dangerous, why don't governments prohibit their sale?*

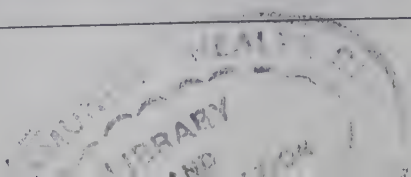
- At least 100 pesticides have been banned, withdrawn or severely restricted by different governments around the world.[45] But governments vary widely in their abilities to control pesticides within and across their borders. As of 1987, 50 countries still had no regulations in place to control what pesticides could be sold in the marketplace.[46]

- The pesticide industry can apply great pressure on governments. When several Brazilian states prohibited imports of pesticides banned in their countries of origin, the industry mounted a massive legal attack until Brazil's highest court declared the laws unconstitutional.[47] Fortunately, the national government stepped in with a constitutionally sound ban.

- The same government officials who regulate often have vested financial or political interests in maintaining a strong agrochemical industry. And in some countries, including Mexico and India, the government itself is a pesticide manufacturer, importer and/or exporter – as well as regulator.

37. *Where governments do regulate pesticides, doesn't that mean the pesticides they allow on the market are safe?*

No. Regulatory schemes commonly require that pesticides be registered or licensed before they can be sold within the country. In making licensing decisions, governments use industry-supplied health and safety data to evaluate a pesticide's potential to cause harm. A major scandal broke out in 1983, when the U.S. government revealed



that 212 pesticides on the market had been registered with invalid data. A private laboratory, Industrial Bio-Test (IBT) Laboratories, had falsified data or used sloppy lab techniques on two-thirds of its safety testing for pesticide companies.[48] At least 25 percent of all pesticide registrations in Canada had also relied on the invalid data, and in many developing countries the percentages are far higher.[49]

38. If so many of the poisonings are in the Third World, isn't it mainly the responsibility of Third World governments to ensure that pesticides are used safely in their countries?

All governments should act to protect their citizens from dangerous and inappropriate technologies. But many countries are run by local elites who do not have the interests of the majority of people in mind. And many Third World governments simply do not have the financial resources or trained staff to implement and enforce pesticide controls.

The TNCs and governments of industrialized countries which export pesticides have far greater scientific and financial resources for testing and licensing pesticide use than do their counterparts in developing countries. There is no excuse for the current double standard, which allows pesticides too dangerous for unrestricted use to be exported to developing countries, with minimal notification, if any.

39. What should governments be doing about pesticides?

As a first step, all governments should bring their pesticide regulations up to the minimum standards of FAO's International Code of Conduct on the Distribution and Use of Pesticides, unanimously adopted by the 158 member nations of the UN Food and Agriculture Organization (FAO).[50] Exporting countries should implement the principle of 'prior informed consent', which means not allowing a banned, restricted or untested pesticide to be exported without the importing country government's consent.

Governments should also enact 'right to know' laws guaranteeing the right of people and communities exposed to pesticides to have full information about those chemicals. And they can ensure access to other vital information by establishing national pesticide poisoning centres and mandatory reporting of poisonings, and by carrying out public education campaigns about pesticide hazards.

Perhaps most important of all, governments can help wean their citizens from pesticide dependency by making a national commitment to sustainable development. Such a commitment would include eliminating any subsidies of agricultural chemicals, promoting non-chemical methods of pest control, and fostering the development of sustainable agricultural systems.

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VIII. THE ROLE OF CITIZENS

40. How can individuals and citizens groups lacking expertise in pesticides challenge the opinions of experts in the fields?

The pesticide industry argues that the public debate over pesticides is best left to 'experts'. But this approach is anti-democratic. Since pesticides affect all of us, we all deserve a voice in deciding the future of these substances in our countries.

41. Aren't citizens groups really against the pesticide industry making a reasonable profit on its products?

Of course not. We all have the right to be informed and to be safe. Now that we know how pesticides, though effective at first, actually create problems in the long run, we have a right and a duty to get involved in decisions about pesticide use. By making scarce information available to the public, citizens groups are increasing the awareness of consumers, helping to ensure corporate accountability, and acting in the public interest to protect the 'silent majority'.

42. Isn't it unrealistic to think we could one day live in a world without pesticides?

It is likely that one day our descendants will look back on this century as a very primitive time in the development of human agriculture. Using pesticides is basically chemical warfare against other organisms which compete with us for food and fibre. We cannot win this chemical war, the insects are too adaptive and resilient. In the future, our survival as a species will partially depend on developing a more sophisticated, ecologically balanced agriculture using non-chemical or minimal chemical pest control methods.

43. With nuclear weapons and the arms build-up posing such an overwhelming threat, isn't it silly for citizens to worry about a few cases of pesticide poisoning or cancer?

The majority of people in developing countries live in rural areas and work in agriculture. Our work will not only prevent human suffering, but also help these people gain more control over their lives. That alone is justification for our efforts.

And many of the underlying reasons for the arms build-up – the inequitable distribution of resources in the world, and the quest for profits regardless of human or environmental costs – are the same for the proliferation of pesticides. By fighting one we are helping in the fight against the other.

44. Given the enormity of pesticide-related problems, how can ordinary people make a difference?

Citizens all over the world are successfully fighting pesticide problems:

- In Senegal, environmentalists and farmers are combining traditional wisdom with scientific discoveries to develop sustainable farming systems.
- In Korea, consumers are testing food from markets in a campaign to get government standards for pesticide residues on food.
- Local residents in the U.S. are successfully opposing the aerial spraying of herbicides on public lands.
- And citizens in Colombia and Ecuador are pressuring the pesticide industry for more responsible marketing practices, by monitoring how pesticides are advertised and sold.

All these groups, and many others, are participating in the Pesticide Action Network (PAN), an international linking of citizens working to curb misuse of pesticides. Anyone can participate in PAN's information sharing and campaigning by contacting the nearest PAN regional centre.

You too can join in! All it takes is to become informed and to begin speaking out. By reading this booklet, you have taken the first step.

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Resources

1. Bull, David. **A Growing Problem: Pesticides and the Third World Poor.** OXFAM, Oxford, 1982.

This well-documented book on the consequences of pesticide use in the Third World has practical proposals for action. **Available from:** OXFAM, 274 Bansbury Road, Oxford OX2 7DZ, United Kingdom. **Price:** £4.95.

2. Foo, Gaik Sim. **The Pesticide Poisoning Report: A Survey of Some Asian Countries.** IOCU, Penang, 1985.

The study examines the prevalence of pesticide poisoning in Indonesia, Malaysia, Sri Lanka and Thailand and makes extensive recommendations on what should be done to prevent this growing epidemic. **Available from:** IOCU, P.O. Box 1045, 10830 Penang, Malaysia. **Price:** US$8.

3. Gips, Terry. **Breaking the Pesticide Habit: Alternatives to Twelve Hazardous Pesticides.** International Alliance for Sustainable Agriculture, Minneapolis, 1987, and IOCU, Penang, to be published in early 1989.

The book details specific pest control alternatives for applications of each of the "Dirty Dozen" pesticides. **Available from:** IASA, Newman Center at the University of Minnesota, 1701 University Ave. S.E., Room 202, Minneapolis MN 55414, USA., and IOCU, P.O. Box 1045, 10830 Penang, Malaysia. **Price:** US$14.95.

4. Goldenman, Gretta and Rengam, Sarojini. **Problem Pesticides, Pesticide Problems: A Citizens' Action Guide to the International Code of Conduct on the Distribution and Use of Pesticides (Completely Revised Second Edition).** IOCU, Penang, 1988.

The guide analyses the strengths and weaknesses of the Pesticide Code, provides suggestions to monitor its implementation and ideas for campaigning to curb the irrational use of pesticides. **Available from:** IOCU, P.O. Box 1045, Penang, Malaysia. **Price:** US$10.

5. Hansen, Michael. **Escape from the Pesticide Treadmill: Alternatives to Pesticides in Developing Countries.** Institute for Consumer Policy Research, Mt. Vernon, New York, 1988, and IOCU, Penang, 1988.

The book provides detailed case studies of successful IPM programmes in developing countries. **Available from:** Institute for Consumer Policy Research, Consumers Union, 256 Washington St., Mt. Vernon, NY 10553, USA, and IOCU, P.O. Box 1045, 10830 Penang, Malaysia. **Price:** US$12.

6. Hansen, Michael and Rengam, Sarojini. **Violating the Pesticide Code: A Survey of Indonesia, the Philippines and Thailand.** IOCU, Penang, 1987.

A monitoring report of three countries in South East Asia. **Available from:** IOCU, P.O. Box 1045, 10830 Penang, Malaysia. **Price:** US$5.

7. **Monitoring and Reporting the Implementation of the International Code of Conduct on the Use and Distribution of Pesticides (FAO Code): Final Report.** Environment Liaison Centre (International), Nairobi, 1987.

It is a concise, startlingly informative and often shocking synopsis of pesticide use and misuse around the world. This report documents the results of monitoring the implementation of the Pesticide Code in 13 countries. **Available** also in French and Spanish **from:** ELC(I), P.O. Box 72461, Nairobi, Kenya. **Price:** US$10.

8. Moses, Marion. **Monitoring the International Code of Conduct on the Use and Distribution of Pesticides in North America: A Field Survey of Pesticide-Related Working Conditions in Four Locations in the U.S. and Canada.** Pesticide Education and Action Project, San Francisco, 1988.

The regional report for North America is **available from:** Pesticide Education and Action Project, P.O. Box 610, San Francisco, CA 94101, USA.

9. **Pesticides Don't Know When to Stop Killing: The "Dirty Dozen" Information Kit.** Pesticide Education and Action Project, San Francisco, 1985.

This information packet for PAN's International "Dirth Dozen" Campaign contains scientific data sheets for each of the twelve targetted pesticides, background articles, an organizer's guide, posters and more. **Available** also in Spanish **from:** PEAP, P.O. Box 610, San Francisco, CA 94101, USA. **Price:** US$10.

10. **The Pesticide Handbook: Profiles for Action** (third edition). IOCU, Penang, third edition to be published in early 1989.

An invaluable reference with data on 44 problem pesticides and background articles. **Available from:** IOCU, P.O. Box 1045, 10830 Penang, Malaysia. **Price**: US$12 for non-profit groups, US$24 to others.

11. Weir, David and Mark Schapiro. **Circle of Poison: Pesticides and People in a Hungry World**. Institute for Food and Development Policy, San Francisco, 1981.

This classic text documents how pesticides banned or restricted in their countries of origin return as residues on imported foodstuffs. **Available** also in Spanish **from**: IFDP, 1885 Mission Street, San Francisco, CA 94103, USA. **Price:** US$3.95.

Audio-Visuals

1. **Bitter Harvest: Pesticides and the Third World.** Produced by the International Centre for Conservation Education, Cheltenham, UK for the Environment Liaison Centre (International), Nairobi, Kenya, 1987. Narration by Michael Drew, 22 mins, slides, 60 frames. Also available on video.

It summarizes the dangers associated with pesticide use and pays particular attention to ways of reducing pesticide dependence and the urgent need to control the export to and use of unacceptable hazardous products in developing countries. **Available from:** Conservation Education Services Ltd, Greenfield House, Guiting Power, Cheltenham, Glos. GL54 5TZ, UK. **Price:** £18.25 (for slide-pack and cassette narration with script notes) and £18.90 (on BETA format or PAL video cassette).

2. **Pesticides and Pills: For Export Only (Part 1).** Robert Richter Productions, New York, 1981, 16mm film, colour, 57 minutes. Also available on video.

Exposes the export of highly toxic pesticides that have been banned in the U.S. and other industrialized countries to the Third World. **Available from:** Robert Richter Productions, 330W 42nd Street, New York, NY 10036, USA.

3. **Profits from Poison: Pesticides and IPM in Asia.** Television Trust for the Environment, London, 1987, Video, 30 mins.

Filmed in Thailand and the Philippines, it takes a close look at alternatives to pesticides, why they are necessary and why they are not being developed as fast as they should be. **Available from:** Television Trust for the Environment, 46 Charlotte Street, London WIP ILX, UK.

ABOUT PAN

The Pesticide Action Network (PAN) International is a worldwide citizens' coalition of environmentalists, consumers' groups, farmers' groups, research organizations, voluntary development agencies and individuals dedicated to replacing pesticides with safe, sustainable alternatives. PAN links millions of people belonging to more than 350 groups in at least 40 countries.

PAN participants monitor pesticide practices and work on pesticide-related problems in their own countries. They also exchange vital information with each other and cooperate on international PAN efforts, such as the 'Dirty Dozen' campaign focusing on 12 particularly hazardous pesticides. To link up with PAN, write to the 'PAN Coordinator' at the PAN Regional Centre nearest to you:

AFRICA

Environment Liaison Centre (International)
PO Box 72461
Nairobi
Kenya
Tel: (254) 2 24770
Telex: 23240 ENVICENTRE
Cable: ENVICENTRE
Fax: (254) 2 331276

Environnement et Developpement du Tiers Monde,
B.P. 3370,
Dakar,
Senegal
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LATIN AMERICA

Fundacion Natura
Casilla 253
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Ecuador
Tel: 249-780
Telex: 21211 NATURA ED
Fax: (593) 2 564773

NORTH AMERICA

Pesticide Education & Action Project (PEAP)
PO Box 610
San Francisco CA 94101
USA
Tel: (415) 541 9140
Telex: 340 275 GREENPEACE SFO
Fax: (415) 541 9253

Quotes

I. How Safe are Pesticides?

"...there is no such thing as an entirely safe pesticide."

Mary O'Brien, Ph.D., Northwest Coalition for Alternatives to Pesticides (NCAP), Oregon, U.S.

II. Pesticides and Human Health

"Pesticide illnesses is the new Third World disease."

Dr. Jerry Jeyaratnam, Department of Social Medicine and Public Health, National University of Singapore, Singapore.

III. Pesticides and the Environment

"Pesticides are the USA's number one environmental problem."

Lee Thomas, Director of the US Environmental Protection Agency, U.S. 1986.

IV. Pesticides and Agriculture

"The use of pesticides, a part of the agricultural programme in Indonesia and other rice growing nations for some 20 years, does more harm than good because it does more to eliminate the natural enemies of pests than the pests themselves."

Minister of National Development Planning, Indonesia, in establishing a national IPM programme for rice which also banned 57 insecticides, Indonesia.

V. Alternatives to Pesticides

"A Sustainable Agriculture is one which depletes neither the people nor the land."

Wendell Berry, American farmer and poet, U.S.

"For an agriculture to be truly sustainable, it must be ecologically sound, economically viable, socially just and humane."

Terry Gips, Executive Director, International Alliance for Sustainable Agriculture, Minnesota, U.S.

VI. The Pesticide Industry

"...the probability of risk in connection with the pesticide cannot be completely eliminated."

Hans Aebi, Ciba-Geigy official, Switzerland.

"Far from being anti-business we are for good business. We are only against the business of violence, we are against the business of manipulation and we are against the business of waste. The realities of pesticide marketing and use today involves just too much business in violence, in manipulation and waste. It's that kind of business we are against."

Anwar Fazal, Director, International Organization of Consumers Unions, Regional Office for Asia and the Pacific, Penang, Malaysia.

VII. The Role of Governments

"Stop using us as a dumping ground! Kenya detests the use of developing countries as experimental or dumping grounds for chemical products that have been banned or have not been adequately tested."

Dr. Gikonyo Kiano, Minister for Water Development, Kenya, at a 1977 UN Environment Programme meeting, Nairobi, Kenya.

VIII. The Role of Citizens

"We must all work towards the day when we can live in a world free of hazardous chemical pesticides. We must break out of the pesticide habit."

S.M. Mohammed Idris, President, Sahabat Alam Malaysia (Friends of the Earth), Penang, Malaysia.

"Only if the consumer movement is truly international and carries with it the same brave and angry spirit that moved the consumer advocates who laid the basis of the movement will we see real change. Only then will it mean real things to real people."

Anwar Fazal, Director, International Organization of Consumers Unions, Regional Office for Asia and the Pacific, Penang, Malaysia.

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25. Frances Moore Lappe and Joseph Collins. World Hunger: Twelve Myths. San Francisco, USA: Institute for Food and Development Policy (1986).

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27. Michael Hansen. Escape from the Pesticide Treadmill: Alternatives to Pesticides in Developing Countries. Penang, Malaysia: IOCU (1988). See also Terry Gips. Breaking the Pesticide Habit: Alternatives to 12 Hazardous Pesticides. Minneapolis, MN: International Alliance for Sustainable Agriculture (1987).

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About IOCU

The International Organization of Consumers Unions (IOCU) is a non-profit federation of some 160 consumer groups in over 56 countries dedicated to the protection and promotion of consumer interests worldwide. The IOCU Regional Office for Asia and the Pacific organized and hosted the founding meeting of the Pesticide Action Network (PAN) and acts as the PAN Regional Coordinating Centre for the Asia-Pacific Region. Further information about IOCU can be obtained from any of the following offices:

- IOCU Central Office, 9 Emmastraat, 2595 EG The Hague, Netherlands.
- IOCU Regional Office for Asia and the Pacific, P.O. Box 1045, 10830 Penang, Malaysia.
- IOCU Regional Office for Latin America and the Caribbean, Casilla 10993, Sucursal 2, Montevideo, Uruguay.

About PAN

Pesticide Action Network (PAN) is a worldwide coalition of citizens groups and individuals who are opposed to the overuse and misuse of pesticides. Launched in May 1982, PAN unites over 300 organizations in some 50 countries.

PAN aims to raise public awareness about pesticide abuse by campaigning against particularly toxic pesticides as well as unethical corporate marketing practices. It seeks to promote alternatives to pesticides and to encourage national governments and international agencies to develop and implement effective policies on the manufacture, distribution and use of pesticides.

Further information about PAN can be obtained from any of the 6 Regional Coordinating Centres:

- AFRICA — Environment Liaison Centre (International), P.O. Box 72461, Nairobi, Kenya.
  — Environnement et Developpement du Tiers Monde, B.P. 3370, Dakar, Senegal.
- ASIA AND THE PACIFIC — IOCU Regional Office for Asia & the Pacific, P.O. Box 1045, 10830 Penang, Malaysia.
- EUROPE — PAN Europe, Stevinstraat 115, 1040 Brussels, Belgium.
- LATIN AMERICA — Fundacion Natura, Casilla 253, Quito, Ecuador.
- NORTH AMERICA — Pesticide Education and Action Project, P.O. Box 610, San Francisco 94101, USA.

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